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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/667,279 | 09/18/2003 | Vladimir I. Gorokhovsky | DSC-P2-US | 8646 |

21616 7590 12/06/2004

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| EXAMINER | |
|---|---|
| MCDONALD, RODNEY GLENN | |
| **ART UNIT** | **PAPER NUMBER** |
| 1753 | |

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/667,279 | GOROKHOVSKY, VLADIMIR I. | |
| | Examiner | Art Unit | |
| | Rodney G. McDonald | 1753 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/958,703.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/04, 5/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-62 of U.S. Patent No. 6,645,345. Although the conflicting claims are not identical, they are not patentably distinct from each other because.

Regarding Applicant's claim 1, U.S. Pat. No. 6,645,345 teach in claim 1, for example, a vacuum arc coating apparatus comprising a rectangular cathode plate having opposed long sides connected to a negative pole of an arc current source, the cathode plate having an evaporation surface, a coating chamber defined by the evaporation surface and a housing, a substrate holder within the coating chamber, at least one anode within the coating chamber spaced from the evaporation surface, connected to a positive pole of a current source, an arc igniter for igniting an arc between the cathode and the anode and generating an arc spot on the evaporation

surfaces, and a magnetic steering system comprising at least first and second steering conductors arranged along opposite sides of the cathode plate, the first steering conductor carrying a current in a direction opposite to a direction of current in the second steering conductor, the first and second steering conductors each being disposed in the vicinity of the evaporation surface so that a magnetic field generated thereby exerts a magnetic influence on the arc spot, the first steering conductor being electrically independent of the second steams conductor, wherein by varying a level of current applied through the first steering conductor relative to the second steering conductor the arc spot shifts toward a long side of the cathode plate.

Regarding Applicant's claim 2, U.S. Pat. No. 6,645,345 teach in claim 2, for example, the first and second steering conductors being substantially linear.

Regarding Applicant's claim 3, U.S. Pat. No. 6,645,354 teach in claim 3, for example, the first and second steering conductors are oriented substantially parallel to the long sides of the cathode plate.

Regarding Applicant's claim 4, U.S. Pat. No. 6,645,354 teach in claims 8 and 51 having steering conductors placed along the short sides and long sides of the cathode plates.

Regarding Applicant's claim 7, U.S. Pat. No. 6,645,354 teach, for example, focusing conductors are arranged along long sides of the cathode plate.

Regarding Applicant's claim 8, U.S. Pat. No. 6,654,354 teach in claim 10, for example, teach that the fields generated by the focusing conductor shift the plasma away from the cathode plate. (i.e toward the substrate).

Regarding Applicant's claim 11, U.S. Pat. No. 6,645,354 teach in claim 8, for example, a vacuum arc coating apparatus comprising a rectangular cathode plate having opposed long sides and opposed short sides and connected to a negative pole of an arc current source, the cathode plate having an evaporation surface, a coating chamber defined by the evaporation surface and a housing, containing a substrate holder, at least one anode within the coating chamber spaced from the evaporation surface, connected to a positive pole of a current source, an arc igniter for igniting an arc between the cathode and the anode and generating an arc spot on the target evaporation surface, and a magnetic steering system comprising at least first and second steering conductors respectively arranged behind the evaporation surface along the short sides of the cathode plate, the first steering conductor carrying a current in a direction opposite to a direction of current in the second steering conductor the first and second steering conductors being electrically independent and being disposed in the vicinity of the evaporation surface so that a magnetic field generated thereby exerts a magnetic influence on the arc spot, wherein the magnetic fields generated by the steering conductors are oriented in the same direction in front of the evaporation surface such that a level of current through the first and second steering conductors can be varied independently to thereby direct are spots in a desired direction around the evaporation surface.

Regarding Applicant's claim 12, U.S. Pat. 6,645,354 teach in claim 9, for example, that the steering conductors are substantially linear.

Regarding Applicant's claim 13, U.S. Pat. 6,645,354 teach in claim 51, for example, that the steering conductors are oriented along the long sides of the cathode plate.

Regarding Applicant's claim 14, U.S. Pat. 6,645,354 teach in claim 8, for example, that the steering conductors are also provided along short sides of the cathode plate.

Regarding Applicant's claim 17, U.S. Pat. 6,645,354 teach in claim 10, for example, that the focusing conductors are provided along the long sides of the cathode plate.

Regarding Applicant's claim 18, U.S. Pat. 6,645,354 teach in claim 10, for example, that the magnetic fields direct the plasma away from the evaporation surface. (i.e. toward the substrate).

Regarding Applicant's claim 19, U.S. Pat. 6,645,354 teach in claim 8, for example, that the steering conductors are parallel to the short sides of the cathode plate.

The differences between U.S. Pat. 6,645,354 and the present claims is that the at least one rectangular cathode plate is not discussed (Claims 1 and 11), the plurality of anodes is not discussed (Claims 1 and 11), utilizing more than one cathode plate utilizing the separate steering conductors is not discussed (Claim 5, 6, 15 and 16), utilizing a plurality of steering conductors is not discussed (Claim 9), a plurality of shields is not discussed (Claims 10 and 20)

Regarding the at least one cathode plate of claims 1 and 11 and the plurality of anodes of claims 1 and 11, "at least one" reads on a single rectangular cathode plate which the claims of U.S. Pat. 6,645,354 teach and the "at least one anode" of U.S. Pat. 6,645,354 suggests one or more than one anode which reads on a plurality of anodes. Also claim 56 of U.S. Pat. 6,645,354 teach utilizing one or more anodes.

Regarding the utilization of more than one cathode plate with separate steering conductors, Claim 53 of U.S. Pat. 6,645,354 teach utilizing two cathodes which reads on a plurality of cathodes. As for the steering system it would follow that since U.S. Pat. 6,645,354 teach steering conductors for cathode plates that such steering systems would apply to the two cathode plates.

Regarding the plurality of shields, claims 27 and 28 of U.S. Pat. 6,645,354 teach utilizing plural shields.

The motivation for utilizing at least one rectangular cathode plate, utilizing a plurality of anodes, utilizing more than one cathode plate utilizing the separate steering conductors, utilizing a plurality of steering conductors and a plurality of shields is that it allows for controlling the erosion zone. (Column 4 lines 46-51; Column 4 line 66)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified U.S. Pat. 6,645,354 by utilizing at least one rectangular cathode plate, utilizing a plurality of anodes, utilizing more than one cathode plate utilizing the separate steering conductors, utilizing a plurality of steering conductors and a plurality of shields as suggested by U.S. Pat. 6,645,354 because it allows for controlling the erosion zone.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
December 1, 2004